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ABSTRACT

This paper describes the rationale for development of a self-instructional program using the bilingual-dichotic method, which accelerates the learning of foreign words. First, ways of learning vocabulary and the use of bilingual word lists for direct instruction with beginners are noted, and criteria are given for selection of words. Differences between the patterns of common word associations by speakers of Japanese and English are reported. The prevalent use of rote memory by beginners to learn lists of foreign words is discussed, and the bilingual-dichotic method is described as enhancing rote memory through presentation of equivalent foreign and native words in relation to the cerebral lateralization of language processes. Finally, a self-instructional program combining the bilingual-dichotic method with the relevant word variables is presented. Contains 32 references. (Author/MSE)

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Learning Japanese-English Word Lists with the Bilingual-Dichotic Method

Abstract

This article describes the rationale for the development of a self-instructional program using the bilingual-dichotic method. This new method accelerates the learning off foreign words (Aarons, 1990). First, ways of learning vocabulary and the use of bilingual word lists for direct instruction with beginners are noted. Second, criteria are given for the selection of words. Third, differences between the patterns of common word associations by speakers of Japanese and English are reported. Fourth, the prevalent use of rote memory by beginners to learn lists of foreign words is noted. Fifth, the bilingual-dichotic method is described as enhancing rote memory through the presentation of equivalent foreign and native words in relation to the cerebral lateralization of language processes. Finally, a self-instructional program was constructed that combines the bilingual-dichotic method with the relevant word variables.

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Louis Aarons

Word lists for the development of vocabulary are effective in the early stages of learning English. The ease or difficulty of learning words depends on relationships among words and their interactions with learner variables. Beginning level students most often use repetition of materials and rote memory to learn new words. This natural learning process is facilitated where the presentation of the Japanese and English words are compatible with the functional asymmetry of linguistic processing in the human brain. The bilingual-dichotic method presents the English word to the right ear and the Japanese word to the left ear simultaneously. Then, the English word is repeated in both ears. This method is used in a self-instructional program to accelerate the learning of words based on high frequency, common meanings, and normative word associations in the English language. Listening, speaking, reading, and writing are included to help articulate learning between high school and college levels.

Learning Vocabulary with Word Lists

Hunt & Beglar (1998) suggested the teaching of vocabulary through a combination of direct instruction, incidental learning, and the development of independent strategies. Although exposure to large amounts of reading and listening materials may enlarge vocabulary, an initial vocabulary is required to enable the incidental learning, i.e. indirect or uninstructed, of new words. The

best approach for students with limited vocabularies is direct instruction (Hunt & Beglar, 1998). In fact, with intentional efforts to learn, large quantities of words are retained well for long periods of time (Nation, 1982). Lists of words have been commonly used for the initial development of vocabulary. Lado (1955) reasoned that the most powerful factor in acquiring vocabulary in the foreign language (L2) is the vocabulary of the native language (L1). Laufer (1990) pointed out that for beginners presenting words in both (L1) and (L2) is a better method than only the use of synonyms or explanations in L2. Direct instruction using bilingual word lists is an efficient way to provide a foundation for the ongoing incidental learning of vocabulary. Various approaches have been used to select words needed for the usual functions of language.

Word Selection

Richards (1974) described subjective and objective approaches used in the selection of the vocabulary for word lists. He recommended the following principles for the construction of a word list: (1) words with high written and spoken frequencies and a wide range or evenness of dispersion over a sample of language, (2) concrete nouns selected by judgment to be highly familiar or by research to be of high availability, (3) coverage or the inclusion of needed words, i.e., words that could be used to replace other words and the exclusion of unnecessary or redundant words as judged by specialists, and (4) meaning

priorities based on subjective estimates of meanings most commonly associated with words. Importantly, word meanings differ across cultures and between languages according to their cognitive organization that may be indexed in clusters of word associations (Szalay & Maday, 1973; cf. Johnson-Laird, Herrmann, & Chaffen, 1984).

Word Associations

The simplest frameworks for intraverbal connections are associations between words. Word associations are the first words that come to mind when a word is presented and are a function of the person, the stimulus word, and the language. Japanese and English word associations show different patterns of agreement in responses for an individual compared to those for the group within each language. There is a greater diversity of responses to words for speakers of Japanese than for speakers of American English (hereafter designated English). Moran & Murakawa (1968) found the average commonality score for word associations measured with English norms was 9,814 for American but only 2,502 for Japanese subjects. Similarly, Pons & Ecolasse (1982) found that Americans gave the most frequent common responses on 50% of the test words while the Japanese on only 17%. Also, the incidence for the pattern of four identical responses with successive tests was 46% for the Americans but only 7% for the Japanese. Conversely, the

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incidence for the pattern of four different responses was about 35% for the Japanese compared to 3.5% for the Americans (Pons & Ecolasse, 1982). It is plausible that learning words grouped by normative word association data of English could provide the Japanese learner some verbal habits that are part of the intraverbal semantic organization in speakers of English. However, words are also learned more or less readily depending upon the memory ability of the learner.

Rote Memory

In discussing teaching goals for English teachers in Japanese high schools, Gunterman (1985, p. 127) proposed that students should be helped in memorizing vocabulary. He noted that if the students internalize basic words they would not spend time trying to interpret differences in their meanings and as a result they would be more able to concentrate on the difficult words Repetition is the main procedure where study uses rote memory. Higa (1965) noted that repetition has a positive effect on learning. Also, that a relatively large number of repetitions are needed to yield significant effects in verbal learning. College students spontaneously used simple repetition in free study more effectively than the keyword method for the paired-associate (L1-L2) learning of foreign words (Hall, Wilson, & Patterson, 1981). Likewise, beginning and intermediate level high school ESL students used repetition more

frequently than any other uninstructed learning strategy (O'Malley et al., 1985, p. 568, Table 2). Bialystok (1985) stated that if teaching methods are matched more closely to the student's ordinary processes of learning, then the learning of foreign-language materials should be accelerated. Therefore it is plausible that the learning of foreign words would be facilitated where the presentation of the words aid the learner in the use of rote memory. The most relevant variables in rote learning are the capacity of the learner's memory span and the linguistic processing structures of the brain.

Higa (1965) observed that the number of words to be learned should be related to the size limitations of the immediate memory span. He suggested that for new words taught at one time "the optimum number is about five for the average high school student and seven for the average college student and adult." (Higa, 1965, p. 174). This approach is appropriate where one's memory capacity cannot be enlarged. An alternative is to present words in a way that would increase the size of the phonological loop used in memory for the initial learning of unfamiliar sound patterns (Ellis, 1996; Baddeley, Gathercole, & Papagno, 1998). One method is to match the presentation of the words to the functional asymmetry for linguistic processes in the human brain.

Bilingual-Dichotic Method

Overwhelming evidence supports a left hemisphere dominance for the

processing of speech that is accompanied by a dominance of the opposite sound field. Words may be presented monaurally (only at one ear), binaurally (the same word to both ears), or dichotically where different words go simultaneously to each ear. Monaural and dichotic verbal stimulation reveal an inherent perceptual asymmetry favoring words from the right side. Using the strong right-ear advantage for speech processing (Geffen & Quinn, 1984) should help the perception and temporary storage of an unfamiliar foreign word. The magnitude of the right-ear advantage can be influenced by a voluntary direction of attention. Consequently, learning with the bilingual-dichotic method includes instructions for the learner to attend to the foreign word that is presented to the right ear.

The bilingual-dichotic method uses stereophones to present the foreign word to the right ear and simultaneously the equivalent native word to the left ear. Then, the foreign word is presented to both ears. The learner views the list of words in the L1-L2 format corresponding to the dichotic format L1 - L2. Griffin & Harley (1996) found that the L1-L2 format in the learning of words by vision yielded better performance than did the L2-L1 format. This result was obtained for both comprehension and production of the L2 word. Likewise, the L1-L2 visual format yielded significantly better learning of the L2 words than did the L2-L1 format with the corresponding auditory

presentation oof L1 (left ear) -L2 (right ear) in the bilingual-dichotic method (Aarons, 19900).

Auditory ppresentations for the learning of English words paired with their Japanese equiiivalents are illustrated in Figure 1. Repetition of the English word provides for ttwo different events to improve learning. Temporal simultaneity in the first preesentation may maximize the semantic association of the Japanese and English wword through an automatic conditioning (Nodine, 1969). The second preserntation focuses on learning the pronunciation of the English word while yieldingg a faster learning of the word pair (Horowitz & Gordon, 1972). The interval within the same word pair and between them and the next word pair provide (occasions for the learner's rehearsal aloud of the English word.

Insert Figure 1 about here

The bilinggual-dichotic method yielded superior overall performance compared to » conventional or control methods for learning foreign words (Aarons, 19990). In the control methods, the same visual presentations, i.e. L1-L2, were commbined with either two successive auditory presentations of (1) the foreign wordd or (2) the English and then the foreign word. Differences between the effectiveeness of the bilingual-dichotic and control methods were examined

Word Pair	Presentation	Left ear	Right ear
1	1	コマツグミ	**robin**
	1.25 seconds		
	2	**robin**	**robin**
	1.20 seconds		
2	1	スズメ	**sparrow**
	1.25 seconds		
	2	**sparrow**	**sparrow**
	1.20 seconds		
3	1	**紅冠鳥**	**cardinal**
	1.25 seconds		
	2	**cardinal**	**cardinal**
	1.20 seconds		
4	1	ワシ	**eagle**
	1.25 seconds		
	2	**eagle**	**eagle**
		etc	

Figure 1. Auditory presentations of Japanese and English words in the bilingual-dichotic method.

for lists of ten words, which are larger than the average immediate memory span. Thus, improved learning would signify a functional increase of immediate memory. Auditory testing with spoken responses showed faster learning of foreign words as measured by trials to a criterion of 100% correct response, more accurate recall or a higher level of correct responses, and shorter latency of correct responses with the bilingual-dichotic method than with the control methods (Aarons, 1990). Likewise, visual testing with written responses showed significantly better performance for the learning of both foreign words and phrases with the bilingual-dichotic method compared with the control methods (Aarons, 1992).

The New Program

A practical application of the bilingual-dichotic method for the Japanese student is its use in a program titled "Speed English" (Aarons, 1996) to accelerate the learning of over 1,000 basic English words presented in lists with corresponding dialogs for context. This self-instructional program includes a section on pronunciation and word lists from all grammatical categories, i.e. articles, nouns, pronouns, verbs, adjectives, adverbs, prepositions, and conjunctions. The program consists of 4 audiocassettes and a workbook.

The selection of words took into account the above noted recommendations on word frequencies, common meanings, and word associations. The first 500

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words are of high frequency and wide range in both written (Kucera & Francis, 1967) and spoken English (Howes, 1966). Moreover, priority is given to content words such as "numbers, ... common foods, days of the week, months, seasons, clothing, utensils, body parts, furniture, family relationships, colors, ... animals, ... occupations, ... activities... every day terms." (Wharton, 1986, p.31). Likewise, the most common meanings of words are used as recommended by Richards (1974). For example, the word "rice" as used in English is given in the program for the equivalent of the Japanese word kome (cooking rice). "Rice" is not presented for ine (rice plant), momi (rice grains), gohan (cooked rice), or mochi (rice cake). Therefore, the Japanese student should learn what the American speaker thinks most readily of, i.e. cooking rice, instead of the other types of rice.

Word lists were also based on normative hierarchies of word associations in English. The Japanese speaker who learns clusters of English word associations should associate things somewhat like an English speaker does when using the English language. Further, to the extent that thinking is shaped or sequenced by word associations, it is inferred that the learner would also think somewhat like an English speaker. Therefore, another 510 words were selected in accordance with the most common associations to categories of priority content and coverage (Black, et al., 1985). For example, a part of the

human body: legs, arms, head, eye, foot, nose, finger, ear, hand, toe, mouth, stomach, hair, etc. (Battig & Montague, 1969) and a piece of jewelry: ring, *necklace, bracelet, earring, pin, watch, brooch etc. (Shapiro & Palermo, 1970).*

Self-Study Procedure

Instructions explain the unique arrangement for the presentation of the words. The student is advised that most people hear the English word easier, louder, or clearer than the Japanese word. The English word is to be kept on the right ear. The Japanese word may or may not be heard but should be read instead of listened to. In brief, attention is only given to the English words. The learner is to say each word aloud between presentations of the word pairs. Mental effort reported for learning with this method does not differ from that for conventional methods (Aarons, Aarons, & Lachman, 1999). Moreover, the student learns faster without concentrating consciously on joining or linking the meanings of the Japanese and English word equivalents. The shorter time required for learning indicates a smaller total expenditure of effort in mental work with the bilingual-dichotic compared to conventional or control methods.

Lists of words are presented in three different orders to avoid the serial position effect and learning based on associations of constant orders. The serial position effect denotes the faster learning of the first and last words in a list, i.e. more repetitions of the list are needed to learn the words located in the middle

of the list (cf. Higa, 1965). By using varied orders for the same words in successive lists, the learning advantage for the beginning and end positions in a list of words is balanced across the words in the list. Moreover, where the same words are presented during study in different orders, the L2 words are learned without reference to the words that immediately precede or follow them. For example, the learner does not have to mentally recite Monday, Tuesday, and Wednesday, to be able to recall and say Thursday. An independent learning of paired L1-L2 words is achieved. Learners are instructed to study only 2 - 3 lists per day with a brief rest between the diffferent lists. A sample set of the visual presentations for one list is given in Figure 2.

Insert Figure 2 about here

The learner takes a test after the third presentation of the list. The self-test is carried out by writing the English equivalent for each Japanese word and then checking the answer for correctness. If all words are not correct, then the learner restudies the list and repeats the self-test. At the next session, the learner reviews the most recently learned lists before starting with the new ones. Dialogs using the learned English words are presented twice; first at a slow rate and then at a conversational rate. The dialogs are interspersed throughout the program and the learner is instructed to read, listen, and repeat

鳥

リスト 101-1

コマツグミ	- robin
スズメ	- sparrow
紅冠鳥	- cardinal
ワシ	- eagle
カラス	- crow
カナリア	- canary
セキセイインコ	- parakeet
フクロウ	- owl
ハト	- dove
オウム	- parrot

101-2

セキセイインコ	- parakeet
カナリア	- canary
ハト	- dove
フクロウ	- owl
オウム	- parrot
コマツグミ	- robin
紅冠鳥	- cardinal
スズメ	- sparrow
カラス	- crow
ワシ	- eagle

101-3

紅冠鳥	- cardinal
コマツグミ	- robin
カラス	- crow
スズメ	- sparrow
ワシ	- eagle
セキセイインコ	- parakeet
ハト	- dove
カナリア	- canary
オウム	- parrot
フクロウ	- owl

TONE

SELF-TEST

紅冠鳥	_____
コマツグミ	_____
カラス	_____
スズメ	_____
ワシ	_____
セキセイインコ	_____
ハト	_____
カナリア	_____
オウム	_____
フクロウ	_____

Figure 2. Study page for list of birds.

them out loud. A review test consisting of two words from each list is given at the end of each cassette. If both words are not correct, then the learner is to return to the corresponding list and restudy the words. The program also containss useful expressions and slang or idioms. An elementary review of basic grammaar in English is included for articles, nouns, verb tenses, adverbs, adjectivves, prepositions, conjunctions, and sentence structure.

The content of Speed English is most useful for beginning students at the middle and high school levels. However, it also provides an opportunity for relearning or the development of fluency by intermediate students. Students must recognize and use words automatically and developing fluency "overlaps most of all with developing the skills of listening, speaking, reading, and writing" (Nation, 1994, p.208). Consequently, the multisensory approach of listening (bilingual and monolingual presentations), speaking (saying English word aloud), reading (viewing word pairs in lists), and writing (in the self-test) of core vocabulary may be expected to facilitate an articulation of vocabulary learning between high school and college programs.

References

Aarons, L. (1983). [Ear advantage of native Japanese students and the learning of English words]. Unpublished raw data.

Aarons, L. (1990). The bilingual-dichotic method for learning a foreign-language vocabulary. Applied Cognitive Psychology, 4, 383-392.

Aarons, L. (1992). Bilingual-dichotic learning of foreign-language vocabulary: Visual cued-recall and phrases. In H. Motoaki, J. Misumi, & B. Wilpert (Eds.), Proceedings of the 22nd International Congress of Applied Psychology, Vol. 3, Social, Educational, and Clinical Psychology (p.182). Kyoto, Japan: Hillsdale, NJ: Lawrence Erlbaum Associates.

Aarons, L. (1996). Speed English (2nd ed.), Skokie, IL: Wordmate.

Aarons, L., Aarons, A., & Lachman, J. H. (1999). Mental effort in learning with the bilingual-dichotic method. [Feature article in the Agoralanguage Newsletter, February 1999, Vol. 5. No. 2]. Retrieved February 1, 1999 from the World Wide Web: http://agoralang.com/agora/agoranews/aarons2.html.

Baddeley, A., Gathercole, S., & Papagno, C. (1998). The phonological loop as a language learning device. Psychological Review, 105, 158-173.

Battig, W. E., & Montague, W. E. (1969). Category norms for verbal items in 56 categories: A replication and extension of the Connecticut Category norms. Journal of Experimental Psychology Monographs, 80 (3, Pt. 2).

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Bialystok, E. (1985). The compatibility of teaching and learning strategies. Applied Linguistics, 6, 255-262.

Black, J. W., Stratton, C. S., Nichols, A. C., & Chavez, M. A. (1985). The use of words in context: The vocabulary of college students. New York: Plenum Press.

Geffen, G., & Quinn, K. (1984). Hemispheric specialization and ear advantages in processing speech. Psychological Bulletin, 96, 273-291.

Griffin, G., & Harley, T. A. (1996). List learning of second language vocabulary. Applied Psycholinguistics, 17, 443-460.

Gunterman, T. G. (1985). Strategies and methods for English teachers in Japanese High Schools. In C. B. Wordell (Ed.) A guide to teaching English in Japan. Tokyo: The Japan Times.

Hall, J. W., Wilson, K. P., & Patterson, R. J. (1981). Mnemotechnics: Some limitations of the mnemonic keyword method for the study of foreign language vocabulary. Journal of Educational Psychology, 73, 345-357.

Higa, M. (1965). The psycholinguistic concept of "difficulty"and the teaching of foreign language vocabulary. Language Learning, 15, 167-179.

Horowitz, L. M., & Gordon, A. M. (1972). Associative symmetry and second-language learning. Journal of Educational Psychology, 63, 287-294.

Howes, D. (1966). A word count of spoken English. Journal of Verbal

Learning and Verbal Behavior, 5, 572-604.

Hunt, A., & Beglar, D. (1998). Current research and practice in teaching vocabulary. The Language Teacher Online, 22 (1), 1-9.

Johnson-Laird, P. N., Herrmann, D. J., & Chaffin, R. (1984). Only Connections: A critique of semantic networks. Psychological Bulletin, 96, 292-315.

Kucera, H., & Francis, W. (1967). Computational Analysis of Present-Day American English. Providence: Brown University Press.

Lado, R. (1955). Patterns of difficulty in vocabulary. Language Learning, 6, 23-41.

Laufer, B. (1990). Ease and difficulty in vocabulary learning: Some teaching implications. Foreign Language Annals, 23, 147-155.

Moran, L. J., & Murakawa, N. (1968). Japanese and American association structures. Journal of Verbal Learning and Verbal Behavior, 7, 176-181.

Nation, I. S. P. (1982). Beginning to learn foreign vocabulary: A review of the research. RELC Journal, 13(1), 14-36.

Nation, I. S. P. (Ed.) (1994). New ways in teaching vocabulary. Alexandria, VA: TESOL, Inc.

Nodine, C. F. (1969). Temporal variables in paired-associated learning: The law of contiguity revisited. Psychological Review, 76, 351-362.

O'Malley J. M., Chamot, A. U., Stewner-Manzanares, G., Russo, R. P, & Küpper, L. (1985). Learning strategy applications with students of English as a second language. TESOL Quarterly, 19, 557-584.

Pons, L., & Ecolasse, M. (1982). Commonality and reproduction of a word associated response in three samples of French, American, and Japanese students. Psychologia, 25, 205-212.

Richards, J. C. (1974). Word lists: Problems and prospects. RELC Journal, 5(2), 69-74.

Shaprio, S. I., & Palermo, D. S. (1970). Conceptual organization and class membership: Normative data for representatives of 100 categories. Psychonomic Monograph Supplements, 3 (11, Whole No. 43).

Szalay, L. B., & Maday, B. C. (1973). Verbal associations in the analysis of subjective culture. Current Anthropology, 14, 33-50.

Wharton, J. (1986). Teaching tactics for Japan's English classrooms. Denver, Colorado: Global Press.